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A low energy threshold CdWO4 scintillating bolometer for gA measurement

Neutrinoless double beta decay (0vbb) is a rare nuclear transition. One of the main elements to design a 0vbb experiment is the prediction of the decay half-life, which strongly depends on the axial-vector coupling gA. A quenched value of gA is a source of spectral distortion in highly-suppressed single beta decay spectra. In this poster, we present the results from a test of a CdWO4 scintillating bolometer installed in the underground laboratory of Canfranc in the CROSS facility. The aim of this test is to reconstruct the spectrum of the beta decay of 113Cd naturally present in the crystal down to an energy threshold of 8 keV. A trigger efficiency analysis was performed to have a reliable reconstruction of the spectrum. The final goal is to use the spectral shape method to derive the effective value of gA from the precise measurement of the beta decay spectrum.

Mini-abstract

A low energy threshold CdWO4 scintillating bolometer for gA measurement

Experiment/Collaboration

CROSS

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